USSR

VORONTSOV, N. N., et al., Zoologicheskiy Zhurnal, No 12, 1971, pp 1,853-1,860

important part in the reproductive isolation existing between sympatric species of this family. A somewhat different classification of the superfamily Dipodoidea is suggested on the basis of karyological and morphological data.

2/2

USSR

UDC: None

VORONTSOV, V. A., GRUDNISTYY, V. V., KAMEKO, V. F., KOSHELENKO, V. V., REZNICHENKO, Yu. T., and YASKEVICH, E. P.

"Device for Determining the Coordinates of an Aerodynamic Shadow Contour on Bodies of Complex Form in Free Molecular Flux"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 27, 1971, p 141, No (11)351113

Abstract: A parallel light beam is used to model the flux such that the model can be fixed in any position. For ease of adjustment, there is a manual indicator showing a thread tied to a movable carriage. The scale of this indicator is used to measure the coordinates of points difficult of access. A diagram of the device is shown.

1/1

USSR

UDC: 621.375.82

DERYUGIN, I. A. and VORONTSOV, V. I.

"Vibration-Cyclotron Resonance"

Kiev, V sb. Kvant. elektronika (Quantum Electronics--collection of works) "Nauk. dumka," No 6, 1972, pp 205-207 (from RZh--Fizika, No 4, 1973, Abstract 4D1167)

Translation: In the nonrelativistic approximation a quantum theory of cyclotron resonance is developed within the constants of a uniform magnetic field and the electric field of an actual hyperboloid capacitor. It is found that for a definite relationship between the electric and magnetic field intensities, when the equality

$$\Omega_{la}^2 = (3/2)\Omega_0^2$$

is satisfied, cyclotron resonance for an axial rotor transforms to vibration-cyclotron resonance for a spherical rotor for the Larmor frequency and characteristic oscillation frequencies of the stroboscopic effect. The equidistance spectrum of the energy eigenvalues between which dipole transitions with three frequencies are

1/2

USSR

DERYUGIN, I. A. and VORONTSOV, V. I., V sb. Kvant. elektronika, No 6, 1972, pp 205-207

possible is determined. When the conditions of spherical symmetry with non-zero orbital moment are satisfied. the vibration-cyclotron effect may be worthy of interest in the new area of laser engineering, quantum gyroscopics. Author's abstract

2/2

USSR

UDC 620.171.5

VORONTSOV, V. K., and POLUKHIN, P. I.

"On the Distribution of Stresses According to Data from Optically Sensitive Codings"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 232-237

Translation: An evaluation is made of the precision of an approximate method for dividing stresses according to data obtained by the optically sensitive coding method. It is proposed that a generalized curve be used in the coordinates -- maximal tangential stress-maximal shift, where the latter value (generally unknown) is replaced by the difference in deformations in the plane of the optically sensitive coding. The area of application of the approximate method is established. Error in determining the components of stresses in the allowable area of ratios of primary deformations in the plane of the optically sensitive coding is not more than 3-8%. It is proposed that the optical method be used as a zero approximation. On this basis, a method for subsequent approximations is proposed. Five figures and four bibliographic entries.

1/1

USSR

UDC 620.171.5

POLUKHIN, P. I., VORONTSOV, V. K., MOSHKOV, V. I., and PETROV, V. A.

"Stress-Deformation State of a Round Billet During Drawing by Flat, Combined, and Cut Hammer Blocks"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 199-205

Translation: Using the optically sensitive coding method, a comparison was made of the stress-deformed state of round billets during drawing by flat, combined, and cut hammer blocks. It is shown that the use of combined and cut hammer blocks in forging round ingots is more expedient. The article gives practical recommendations on the selection of cut hammer blocks. Six figures and five bibliographic entries.

1/1

USSR

UDC 620.171.5

POLUKHIN, P. I., VORONTSOV, V. K., and CHICHENEV, N. A.

"Determining Deformation Components According to Data from the Moire and Optically Sensitive Codings Methods"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 237-241

Translation: It is proposed that two methods, the moire and optically sensitive coding methods, be used jointly to divide deformations. Cases of flat deformation and flat stress condition are considered, and computation formulas for various particular instances are derived. Twenty bibliographic entries.

1/1

USSR

UDC 621.735.032

VORONTSOV, V. K., MOSHKOV, V. I., PETROV, V. A., and CHEKHOVA, L. I.

"On the Effect of the Forging Reduction Ratio on the Macro and Micro-Structure of Heat-Resistant E1481 Steel"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 205-208

Translation: A study is made of the macro- and micro-structure of E1481 steel in all reductions of an ingot 500 millimeters in diameter and 1.17 tons in mass. It is established that during forging on flat hammer blocks to the point where the forging reduction ratio is nine, inadequate working of the central part of the ingot can be observed. The micro-structure is studied in the central and peripheral parts of the ingot. It is shown that the micro-structure of steel in forged pieces obtained with a forging reduction ratio less than nine is characterized by a microconsertal nature. The macro- and micro-structure of forged pieces forged in cut hammer blocks is studied, and the advantage of such technology from the point of view of cemented carbides and consertal nature is demonstrated. Four figures and two bibliographic entries.
1/1

USSR

UDC 621.762.01:669.2

VORONTSOV, V. K., SHANKOV, G. S., and BYAKOV, L. I.

"Use of Methods of Powder Metallurgy for Production of Fine-Grained Silver Chloride"

Plast. deformatsiya met. i splavov [Plastic Deformation of Metals and Alloys -- Collection of works] (Moscow Institute of Steels and Alloys, 64), Moscow, 1970, pp. 246-249, (Translated from Referativnyy Zhurnal—Metallurgiya, No. 1, 1971, Abstract No.1 G455 by the authors).

Translation: The possibility is studied of using methods of powder metallurgy to produce finely dispersed specimens of AgCl, suitable for polarization optical studies. Hydrostatic compression in a container is used to produce a material which approaches the density of the compact material. Optimal modes are found for heat and mechanical working in order to give the material the necessary combination of optical and mechanical properties. 4 figures.

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Powder Metallurgy

USSR

UDC 620.171.5

VORONTSOV, V. K., SHANKOV, G. S., and BYAKOV, L. I.

"Using Powder Metallurgy Methods to Obtain Fine-Grain Silver Chloride"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 246-249

Translation: The possibility of using powder metallurgy methods to obtain fine-grained specimens of silver chloride suitable for polarization-optical research is investigated. During hydrostatic compression in a container, a material is obtained which approximates a compact material in density. Optimal conditions of thermomechanical treatment are found in order to give the material the necessary set of optical-mechanical properties. Four figures and two bibliographic entries.

1/1

USSR

UDC 620.171.5

VORONTSOV, V. K., POLUKHIN, P. I., and BEREZIN, M. V.

"A Method for Investigating Plastic Flow in Metal"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 241-245

Translation: The polarization-optical method of investigating plastic flow of metals, using optically sensitive codings based on polyurethane resins, is proposed. It is proved that the size of deformation differences in the Euler conception may reach 2.4 and more. Pictures of isochromes, moire, and coordinate grids for a shaft compressed under conditions of flat deformation between flat plates are presented. On the basis of experimental data, a diagram is constructed of the relationship between the set of isochromes and the difference in deformations. The existence of a linear dependency between the optical effect and the variety of Euler (or LeGrange) deformations to a value of 1-1.2 is proved. Three figures and two bibliographic entries.

1/1

Forming

USSR UDC: 621.771.0

POLUKHIN, P.I., VORONTSOV, V.K., CHICHENEV, N.A., and ZOTOV, V.F., Moscow Institute of Steel and Alloys

"Study of Plastic Flow by the Moire Method"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 5, 1970, pp 73-76

Abstract: In a study of plastic flow by the Moire method, the scratches left on the metal after its machining with a planer were used as the initial grid. The selection of the direction and spacing of the initial grid depends on the purpose of the investigation. A lead specimen made of two halves on whose inner surfaces scratches were etched was used in the study. Detailed information was obtained on metal displacements and deformations in the central zone of the specimen and in the region in front of the geometric area of deformation. In the presence of any two Moire patterns, displacements at any point of the factual area of deformation can be determined from a geometric interpretation of the Moire streaks. Equations for the calculation of horizontal and vertical displacements are presented.

1/1

USSR

UDC 612.81-06:612.014.45

ANDREYEVA-GALINA, Ye. Ts., ALEKSEYEV, S. V., KADYSKIN, A. V., and VORONTSOV, V. M., Sanitary Hygiene Medical Institute, Leningrad

"Electrophysiological and Biochemical Investigations of the Brain during the Experimental Action of Various Noise Parameters"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, Jul 70, pp 39-42

Abstract: The biological reactions to noise of various structures of the cortex (auditory, visual, and sensorimotor region) and subcortical structures of the cerebrum (specific and nonspecific nuclei of the thalamus, the reticular formation of the mesencephalon, and the pons varolii) were studied in 20 rabbits by means of chronically implanted intracerebral electrodes in the indicated brain structures. The animals were subjected to a constant noise in a special chamber. Tissue respiration of the cerebrum under the influence of noise was investigated. It was found that the oxygen requirement of the cerebral structures depends directly on the duration of the noise; the earliest shifts are observed in the auditory region. The disturbances in tissue respiration can be grouped into two subsequent phases: an activation phase, in which the intensity of tissue respiration is enhanced; and a depressive phase in which the oxygen requirement decreases sharply, indicating a

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USSR

ANDREYEVA-GALINA, Ye. Ts., et al., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, Jul 70, pp 39-42

drop in the functional activity of the regions of the central nervous system studied. Further research on the metabolic processes in the brain and the functioning of the entire brain would be desirable as a means of developing appropriate preventive measures and treatment.

2/2

USSR

UDC 621.791:669.295:621.78.062.3

KUPREYEV, V. P., Engineer, and POLYAKOV, D. A., Candidate of Technical Sciences, PETROV, A. V., Doctor of Technical Sciences, and VORONTSOV, V. V. Engineer

"Change of Protective Medium Composition During Welding of Titaneium in Controlled Atmosphere Chambers"

Moscow, Svarochnoye Proizvodstvo, No 7, Jul 73, pp 24-26

Abstract: Investigation of controlled atmosphere welding of titanium was carried out in an USKS-2 unit with an operating chamber volume of 800 liters, equipped with a vacuum system which provided an operating pressure inside the chamber of 5-6 x 10^{-5} mm Hg for 130-140 minutes. During the welding process the concentration of water vapors was measured along with the concentrations of hydrogen, nitrogen, and oxygen. It was established that hydrogen content is increased as a result of the titanium reacting with the water vapors while the oxygen and nitrogen content was decreased. For a constant argon humidity in the chamber the quantity of hydrogen entering into the gas phase was proportional to the time of arc burning and its effective thermal capacity. An increase of water vapor in the argon by factors of 10 and 100 leads to a respective increase of factors of 2 and 4 of the amount of hydrogen entering

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USSR

KUPREYEV, V. P., et al., Svarochnoye Proizvodstvo, No 7, Jul 73, pp 24-26

into the gas phase, other conditions being equal. 1 figure, 4 tables, 7 bibliographic references.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--COMPARATIVE STUDY OF ADSORPTION OF 2,4,DINITROPHENYL HYDRAZONES ON GRAPHITIZED CARBON BLACK FROM SOLUTIONS -U-

AUTHOR-(03)-VORONTSOV, V.V., KUZNETSOVA, L.P., ELTEKOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 354-359

DATE PUBLISHED----------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ADSORPTION, ORGANIC NITRO COMPOUND, BENZENE DERIVATIVE, HYDRAZONE, ACETONE, CARBON BLACK, ISOTHERM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1600 STEP NO--UR/0069/70/032/003/0354/0359

CIRC ACCESSION NO--AP0125222

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125222

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION OF 2,4,DINITROPHENYL HYDRAZONES OF ACETONE (2,4,DNPHA) AND METHYLPROPYLKETONE (2,4,DNPH MPK) HAS BEEN STUDIED ON GRAPHITIZED CHANNEL BLACK FROM SOLUTIONS IN C SUB2 H SUB5 OH AND CCL SUB4 AT 0, 20 AND 40DEGREES. FROM THE COMPARISON OF THE ADSORPTION ISOTHERMS OF THESE SUBSTANCES AND OF 2,4,DINITROPHENYL HYDRAZONE OF METHYLETHYLKETONE (2,4,DNPH MEK) STUDIED EARLIER IT HAS BEEN CONCLUDED THAT HORIZONTAL SECTIONS OF ISOTHERMS OR INFLECTION POINTS CORRESPONG TO LOOSER PACKING OF MOLECULES OF 2,4,DNPHA AND 2,4,DNPH MPK AS COMPARED TO 2,4,DNPH MEK. THIS VARIATION OF THE ADSORPTION CHARACTERISTICS FOLLOWS THAT OF THE MELTING POINTS AND SOLUBILITIES OF HYDRAZONES IN C SUB2 H SUB5 OH AND CCL SUB4. COMPARISON OF THE ISOTERIC ADSORPTION HEATS OF THE HYDRAZONES STUDIES (4-9 KCAL-MOLE) SHOWS THAT THEIR DECREASE WHEN PASSING FROM C SUB2 H SUB5 OH TO CCL SUB4 IS DUE TO INCREASING COMPETITION OF THE SOLVENT. FACILITY: INSTITUT FIZICHESKOY KHIMII AN SSR, MOSCOW.

UNCLASSIFIED

USSR V

UDC: 541.183:678.046.2

VORONTSOV, V. V., KUZNETSOVA, L. P., and EL'TEKOV, YU. A., Institute of Physical Chemistry, Moscow, Academy of Sciences USSR

"Comparative Study of the Adsorption of 2,4-Dinitrophenylhydrazones on Graphitized Carbon Black from Solutions"

Moscow, Kolloidnyy Zhurnal, Vol 32, No 3, May-Jun 1970, pp 354-359

Abstract: The adsorption of acetone 2,4-dinitrophenylhydrazone (I) and methylpropylketone 2,4-dinitrophenylhydrazone (II) on graphitized channel black from EtOH and CCl_4 solutions at 0, 20, and 40° was studied. Comparison of the area per adsorbed molecule of I and II in dense monolayers with that for methylethylketone 2,4-dinitrophenylhydrazone (III), the adsorption of which had been investigated earlier, showed that the packing of molecules was looser for I and II than for III. The adsorption increased with decreasing solubilities, which diminished in the order III > I > II for either solvent, and were greater for all three substances in EtOH than in CCl_4. The adsorption characteristics were also related to the melting points of the substances, which were 116, 126, and 145° for III, I, and II, respectively. For every hydrazone studied, the heat of

USSR

VORONTSOV, V. V., et al, Kolloidnyy Zhurnal, Vol 32, No 3, May-Jun 1970, pp 354-359

adsorption decreased on transition from an EtOH solution to one in CCl_4. This was due to a corresponding difference in the capacity of molecules of the solvent to compete in adsorption with those of the hydrazones. The authors thank YU. S. SHABAROV for synthesizing the 2,4-dinitrophenylhydrazones.

2/2

Acc. Nr: AP0036525

Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1, pp 32-36

INVESTIGATION OF ADSORPTION OF 2,4-DINITROPHENYL HYDRAZONE OF METHYLETHYLKETONE FROM SOLUTIONS ON GRAPHITIZED CARBON BLACK

Vorontsov, V. V.; Kuznetsova, L. P.; El'tekov, Yu. A.

Summary

Graphitization of channel black leads to great increase of adsorption of 2,4-dinitrophenyl hydrazone of acetone from its solution in C_2H_5OH due to the diminishing role of specific interaction of the solvent molecules with carbon black and increasing role of nonspecific interaction with it of hydrazone molecules. Increasing localization degree of adsorbed molecules with decreasing adsorption temperature leads to the appearance on the carbon black surface covered with a dense monolayer of a second layer of less densely packed molecules of 2,4-DNPHH MEK. Weaker adsorption of 2,4-DNPHH MEK on carbon black from CCl_4 compared to that from alcohol is due to higher adsorption of CCl_4 on carbon black and greater solubility of 2,4-DNPHH MEK in CCl_4.

REEL/FRAME

19721373

USSR

UDC: 621.791.4:539.378.3.01:669.295

VORONTSOV, YE. S., Doctor of Technical Sciences, PESHKOV, V. V., Candidate of Technical Sciences, and GRIGOR'YEVSKIY, V. I., Engineer, Voronezh Polytechnic Institute

"The Kinetics of Cleaning the Surface of Titanium of Oxide Films Under Conditions of a Vacuum"

Moscow, Svarochnoye Proizvodstvo, No 6, Jun 73, pp 5-7

Abstract: The authors develop a methodology for studying the kinetics of the dissolution of oxide films on titanium. The methodology is based on using interference tinting as a process indicator. Specimens of VT1 grade technically pure titanium and the OT4 titanium alloy (25X25X0.3) were ground to V6 class surface finish and washed in ethyl alcohol. Then they were oxidized in air at 600°C for 15 minutes until the appearance of an etalon, light-blue film, 542A thick. The role of closed cavities and autoevacuation is demonstrated in the mechanism of cleaning contacting titanium surfaces. A dependence is obtained of the dissolution time of an etalon light-blue tint, oxide film on temperature in the 525-625°C interval at an air pressure up to 2.10^{-2} mm Hg.

1/1

USSR UDC 661.872.2+847+856:669.092.5.539.27

KORNEYEVA, A. N., LYSENKO, V. P., IYELVLEV, V. M., and VORONTSOV, YE. S., Voronezh Polytechnic Institute

"Structural Changes of Colored Oxide Films on Iron, Nickel, and Copper During Their Reduction by Hydrogen and Carbon Monoxide"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 8, Aug 73, pp 21-26

Abstract: An attempt was undertaken to carefully study the structural changers occurring in colored films on Fe, Ni, and Cu during their reduction by hydrogen and carbon monoxide. Samples of armco iron and electrolytic nickel and copper were oxidized at certain temperatures and the color changes noted: for iron the color of the oxide film changed from blue to violet to yellow when reduced at 400°C with hydrogen and 450°C with Cu; color changes for the oxide film on nickel changed from blue to violet to yellow when reduced at 300°C in hydrogen and 350° -- in carbon monoxide; and for copper -- blue to red to orange when reduced in hydrogen at 300°C and in Cu at 350°C. Analysis of the results showed that the growth of film thickness is accompanied by an increase in crystal size and their perfection.
1/2

USSR

KORNEYEVA, A. N., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 8, Aug 73, pp 21-26

The oxide film on Fe is independent of its thickness and consists primarily of alpha-Fe_2O_3 and a small amount of Fe_3O_4; the oxide film on nickel is NiO; and on copper, according to the degree of film thickening, the content of tenorite CuO is increased and the amount of cuprite Cu_2O is diminished.

The nickel oxide film is not altered by the reduction process. It was shown from electronographic analysis that the structural changes of a film during its reduction and ion migration can cause some rearrangement of the crystal lattice from the higher oxide to the lower. From a thermodynamic viewpoint, the extraction of oxygen from the oxide film leads to the formation of a supersaturated solid solution of the metal in the oxide. From the molecular viewpoint, the mechanism of reduction takes into account the action of the electrical field within the film and the reduction mechanism is just the opposite of the oxidation process. Two figures, nine bibliographic references.

2/2

Single Crystals

USSR

UDC 548.522

PAVLOV, V. S., MOCHALOV, M. M., and VORONTSOV, YE. S., Voronezh Polytechnic Institute

"Growing of Fe_3O_4 and CoO Crystals in a d-c Electric Arc"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 3, 1973, pp 49-52

Abstract: Single crystals of Fe_3O_4 and CoO were grown in a hermetic chamber with controllable atmosphere by substance transfer from the cathode to the anode of the d-c electric arc. The grown crystals were up to 80 mm long and up to 10 mm in diameter. The temperature and the spectrum of the arc, effects of growing conditions and of the electrode spacing on the substance transfer, and also the behavior of the zero electrode were investigated. Phase analysis indicates that in case of Fe_3O_4 sublimation, single crystals of nonstoichiometric Fe_3O_4 spinel develop on the anode, but a crystal of cubic structure grows, when using CoO in the opacity of electrodes. The mechanism of substance transfer is discussed by taking into account thermodynamic factors and the directed motion of charged particles, including electrons. The process of sublimation and condensation of substance in an electric arc can be transformed into a peculiar drawing of the crystal from the gaseous medium through the liquid phase. In this case, the high temperature and control of the growing rate and atmospheric pressure can be considered as con-

1/2

USSR

PAVLOV, V. S., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 3, 1973, pp 49-52

tributory factors for obtaining a single crystal substance. Three figures, three formulas, four bibliographic references.

2/2

USSR

UDC 621.793.3

VORONTSOV, YE. S., and TIKHOMIROVA, D. N., Voronezh Polytechnic Institute

"Production of Copper-Nickel Coatings by Reduction of Applied Oxide Layers With Hydrogen"

Moscow, Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 345-347

Abstract: The authors studied the possibility of applying copper, nickel, and binary copper-nickel coatings to ferrous metals by the reduction of powdered oxide films with gaseous reactants, particularly hydrogen. In experiments steel specimens 6 mm in diameter and 25 mm long were stained with a dye made of powdered Cu_2O, NiO, and mixtures thereof in the form of an aqueous suspension or paste. The oxide layer thus applied was dried in air. Then the specimens were placed in a tube furnace, where the oxide layer was reduced with hydrogen. The thickness and uniformity of the covering metallic layer depend on the thickness and uniformity of the applied oxide layer. The density, porosity, and adhesion of the layer depend on the process temperature regime. At low temperatures the resultant layer is friable and porous and adheres poorly to the base. At relatively high temperatures the layer is rather dense and adheres well to the material of the specimen. The composition of

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203610003-4"

USSR

VORONTSOV, YE. S., and TIKHOMIROVA, D. N., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 345-347

the layer and the degree of its homogeneity can be varied within wide limits. The consecutive application and reduction of various oxides makes it possible to obtain bimetallic and trimetallic coatings. The method is simple and requires no special equipment. The protective properties of the coatings are higher, the higher their nickel content. Reduction at 900° gives a coating with higher protective properties than at 800°.

2/2

USSR

UDC 620.193.01:669.29

PEKSHEVA, N. P., VORONTSOV, YE. S., Voronezh Polytechnic Institute

"Corrosion Resistance of Titanium Coated with Interference-Colored Oxide Film"

Moscow, Zashchita Metallov, Vol 8, No 6, 1972, pp 708-711

Abstract: A study was made of the corrosion resistance of technical titanium type OT4-0 (Ti 98.14%, Fe 0.3%, C 0.1%, Al 0.2%, N_2 0.15%, O_2 0.15%, H_2 0.01%, Mn 0.2%, Si 0.15%, Zr 0.3%) in specimens 25 × 10 × 1.5 mm coated with an interference-colored oxide film. The specimens investigated were coated with a dark yellow oxide film with the first order spectrum (~358 Å). In HCl and H_2SO_4 solutions of different concentration, the weight of the specimens remained constant while the colored film remained on them. Thus, the coloring of the film is an indicator which makes it possible precisely to fix the beginning of solution of the metal. In a 22% solution of HCl, the weight losses of the polished titanium reach 2.395 grams/m^2 in 4 hours, but with the yellow film the weight losses were 0 for 408 hours.

In H_2SO_4 solutions with a 20-45% concentration the corrosion of the polished specimens was insignificant at first but after an induction period it increased rapidly. With a concentration of 55-96.5% the corrosion is observed

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USSR

PEKSHEVA, N. P., et al., Zashchita Metallov, Vol 8, No 6, pp 708-711

from the time the specimen is placed in the liquid. At 75% H_2SO_4 a yellow film is formed on the surface after 20 to 25 hours which makes the metal resistant for 200 hours. In a 60% solution of H_2SO_4 the weight losses of the Ti without the yellow film reached 3.25 g/m^2 in 4 hours while the metal with the yellow film is resistant for 320 hours.

2/2

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CATALYTIC ACTION OF PLATINUM ON THE REDUCTION OF COPPER FROM ITS OXIDES BY HYDROGEN STUDIED BY MEANS OF THE OXIDE COLORS -U-

AUTHOR-(02)-VORONTSOV, YE.S., KOSHKINA, K.A.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(1), 246-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST, HYDROGEN, PLATINUM, COPPER OXIDE, CHEMICAL REDUCTION

CONTROL MARKING--NO RESTRICTIONS

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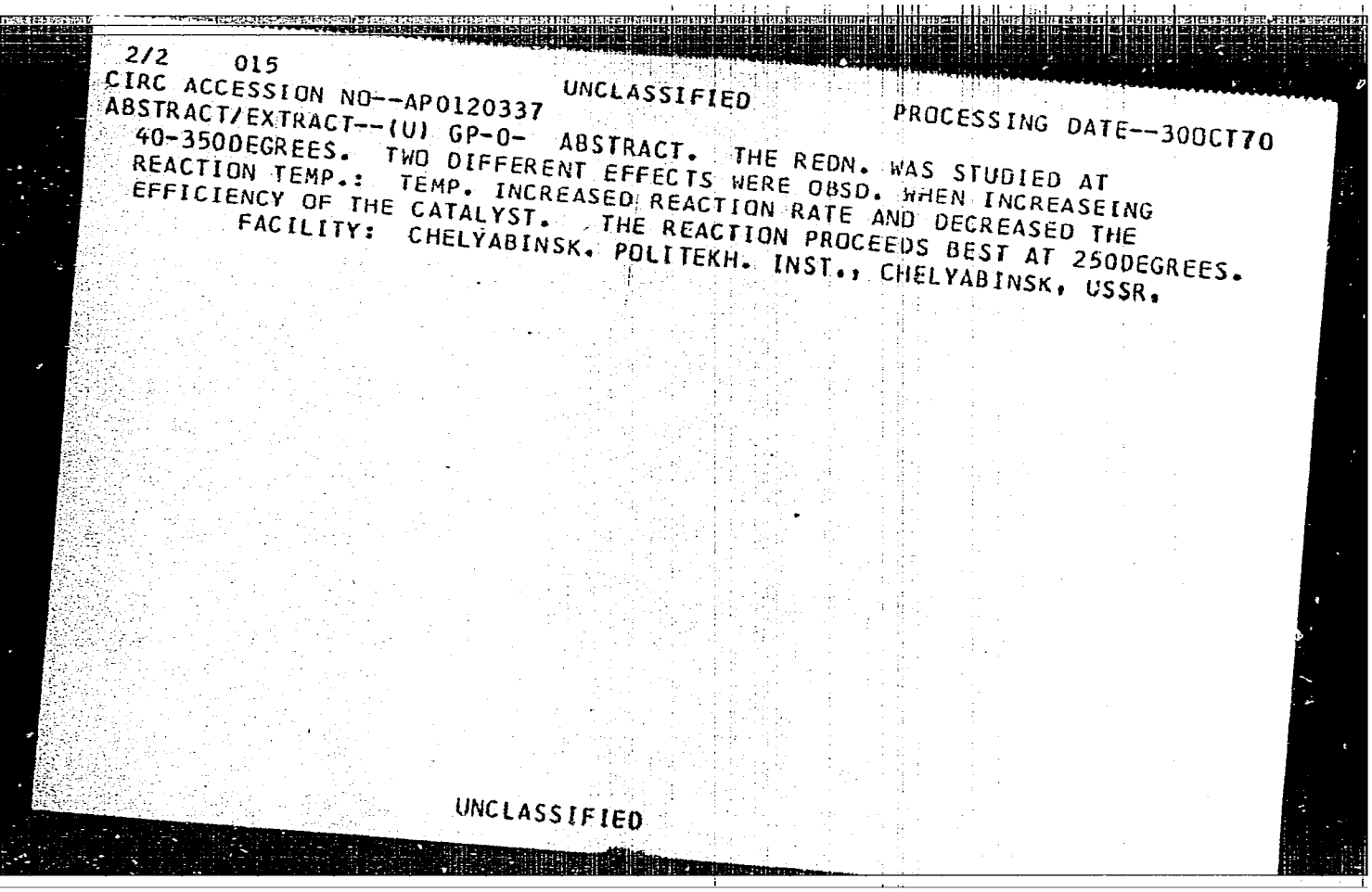
PROXY REEL/FRAME--1997/1558 STEP NO--UR/0195/70/011/001/0246/0248

CIRC ACCESSION NO--AP0120337

UNCLASSIFIED



2/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0120337
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REDN. WAS STUDIED AT 40-350DEGREES. TWO DIFFERENT EFFECTS WERE OBSD. WHEN INCREASEING REACTION TEMP.: TEMP. INCREASED REACTION RATE AND DECREASED THE EFFICIENCY OF THE CATALYST. THE REACTION PROCEEDS BEST AT 250DEGREES.
FACILITY: CHELYABINSK. POLITEKH. INST., CHELYABINSK, USSR.

UNCLASSIFIED

USSR

Radar

UDC: 621.396.96

DYMOVA, A. I. and VORONTSOV, Yu. A.

"Computing the Region of Passive Noises From the Earth's Surface"

Moscow, Radiotekhnika, No. 2, 1972, pp 1-5

Abstract: This theoretical article considers a radar station emitting a complex pulse signal in the direction of the earth's surface. The directional diagram of the station's antenna is assumed to be ideally conic, for the sake of simplicity in the analysis. Thus, the area of the earth's surface illuminated by the antenna radiation is an ellipse, which is considered to be a surface-distributed target creating a mixed signal at the radar receiver. Expressions are obtained for the effective reflecting area as a function of the angle of incidence of the transmitted signal and for the resolving capability of the station. A diagram from which the region of passive noise can be computed is shown, and it is demonstrated that a change in the resolving capability from 100 m to 75 m produces only a slight deformation in the passive noise region.

1/1

USSR

UDC: 621.382.2.012.8

VORONTSOV, Yu. I.

"Equivalent Circuit of Distributed Semiconductor Diodes"

Moscow, Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 1033-1038

Abstract: Equations are derived which describe propagation of waves in a distributed semiconductor diode, where the waves conform to quasistatic conditions with respect to the field in the cross section of the junction, while the current satisfies quasistationary conditions outside of the junction. The equations account for skin effect where the characteristics of the distributed semiconductor diodes are nonlinear. An equivalent circuit for distributed semiconductor diodes is found which reduces to previously used equivalent circuits in special cases. Taking this equivalent circuit as a basis, the author determines the propagation constant of a harmonic wave in the linear approximation. The proposed method of finding an equivalent circuit may be successfully applied to other kinds of structures.

1/1

VORONTSOV, Yu. N.

RAPI /R-760/5-APR-73
Dec 72

(3)

Motulevich, V. P., Yu. N. Vorontsov, and V. M. Yeroshenko. Combustion of carbon particles in supersonic flow of a chemically active gas. FGIV, no. 3, 1971, 345-352.

The approximate method of relative correspondence of Motulevich (IFZh, v. 14, no. 1, 1968) is used to evaluate the surface ablation rate on a body purified by a chemically active gas. To check the theoretical relationships of the process, experiments were conducted in a supersonic wind tunnel. Carbon rod models were placed between the nozzle and a cylindrical diffuser 3-4 mm from the nozzle cutoff. The mainstream parameters were: Mach number M = 2.72-3.03, stagnation temperature T_∞ = 1100-1300° K, stagnation pressure p_∞ = 1.86-2.24 × 10^5 newtons/m^2. The model shapes were a cylinder, a hemisphere-cylinder, and a cone-cylinder. The model diameter was d = 4-8 mm and relative length was $\bar{l}$ = 6 mm. The material nominal density was 1.54 g/cm^3. The modal configuration changes and the surface brightness temperature were measured by photopyrometry. The characteristic wavelength was λ_{eff} = 0.66 microns; the gas was assumed to be optically transparent. The accuracy of temperature measurement was to within ± 4%. When processing the experimental results, it was assumed that the chemical reaction takes place only on the surface within the observed surface-temperature range (1600-2400° K) according to the system:

$$2C + O_2 \rightleftharpoons 2CO.$$

As a result of particle interaction with the flow, the axisymmetric models acquired a shape that can be approximated by an ellipsoid of revolution with the characteristic dimension a = 0.13-2.0. The absolute temperature values near the forward critical point are presented in Table 1.

USSR

UDC: 536.24+662.612.32

MOTULEVICH, V. P., VORONTSOV, Yu. N., YEROSHENKO, V. M., Moscow

"Combustion of Carbon Particles in a Supersonic Flow of a Chemically Active Gas"

Novosibirsk, Fizika Goreniya i Vzryva, No 3, 1971, pp 345-352

Abstract: There is great interest in problems of heat and mass transfer with heterogeneous physical and chemical processes, arising in various areas of technology including power engineering, chemical production, rocket construction, etc. In addition to the development of precise methods for solution of the problem, there is reason for further development of approximate methods which, having physical clarity, simplicity of application and convenience of analysis, are frequently sufficiently accurate for practice. This problem is studied in this work using the method of relative correspondence presented in an earlier work.

1/1

USSR

UDC 615.916.:669.7917.015.25

OKONISHNIKOVA, I. YE., ROZENBERG, YE. YE., and VORONTSOVA, A. S., Institute of Labor Hygiene and Occupational Diseases, Sverdlovsk

"Prophylactic Effect of Succimer in Chronic Experimental Intoxication With Metallic Mercury Vapors"

Moscow, Gigiyena truda i professionalnyye zabolevaniya, No 3, Mar 71, pp 28-31

Abstract: The newly synthesized mercury antidote succimer dithiol is highly specific, harmless for the body, and convenient to use. It was studied in cases of acute mercurbic chloride poisoning of animals. It effectiveness in prophylaxis and under conditions of prolonged exposure to low concentrations of metallic mercury vapor were studied. White rats (24) were subjected to the daily action of metallic mercury vapor in a concentration of 0.15±0.01 mg/m^3 (seven hours per day, five times each week for a period of three months). Half of the group of animals received succimer before and after the exposure in a dose of 100 mg/kg. A third group of 12 rats served as controls. No apparent pathological changes were observed in animals exposed to these relatively low Hg concentrations, but intoxication phenomena were observed, which can rapidly progress to more pronounced signs of acute intoxication

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USSR

OKONISHNIKOVA, I. YE., Gigiyena truda i professionalnyye zabolevaniya, No 3, Mar 71, pp 28-31

When the Hg vapor concentration is increased for a short period (2 hours at 0.76 mg/m^3 on the 35th day of the experiment). Regular treatment with succimer inhibited development of symptoms of chronic intoxication as well as signs of acute accidental poisoning. The normal blood catalase activity was retained, the content of free SH groups in whole blood, blood serum, kidneys and liver were protected, and there was no sharp weight loss in animals to whom succimer had been given. It is recommended that succimer administration be introduced as a prophylactic measure in mercury industry plants.

2/2

USSR

UDC 620.17:669.15'26-194:534-8

KROTKOVA, Ye. Ye., POGODINA-ALEKSEYEVA, K. M., KREMLEV, Ye. N., and VORONTSOVA, I. S.

"Properties and Structure of 40Kh Steel with Thermoultrasonic Tempering"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, Nov 70, pp 64-65

Abstract: A study was made of electrically smelted steel of the following composition: 0.43% C; 0.64% Mn; 0.33% Si; 0.96% Cr; 0.05% Ni; 0.15% Cu; 0.026% P; and 0.020% S. The application of ultrasound (19-20 kc, amplitude 3 μ) in the process of tempering at 100-500° C results in higher hardness and electrical resistance of 40Kh steel, which can be explained by the different degree of martensite decomposition and the state of the carbide phase. Thermoultrasonic tempering does not eliminate the irreversible temper brittleness, but reduces the extent of the zone -- 200° C as compared to 350° C at ordinary tempering. Minimum impact toughness is observed at 350° C regardless of the type of tempering.

1/1

Aluminum and Its Alloys

USSR

UDC 621.3:669.71

VORONTSOVA, L. A., MASLOV, V. V., and PESHKOV, I. B.

"Aluminum and Aluminum Alloys in Electrical Engineering Products"

Alyuminiy i Alyuminiyevyye Splavy v Elektrotekhnicheskikh Izdeliyakh, Moscow, Energiya Press, 1971, 224 pages

Translation of Annotation: This book studies problems of the use of aluminum and aluminum alloys in various electrical engineering products. The physical and mechanical properties of aluminum and aluminum alloys (electrical conductivity, mechanical strength, fatigue, creep, etc.) and specifics of technological processes related to the use of these materials (welding, soldering) are presented.

The book is designed for engineering and technical workers involved in the design, planning, manufacture, operation, and repair of electrical engineering products in which aluminum and its alloys are used as conductors and structural materials.

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VORONTSOVA, L. A., et al., Alyuminiy i Alyuminiyevyye Splavy v Elektrotekhnicheskikh Izdeliyakh, Moscow, Energiya Press, 1971, 224 pages

USSR

VORONTSOVA, L. A., et al., Alyuminiy i Alyuminiyevyye Splavy v Elektrotekhnicheskikh Izdeliyakh, Moscow, Energiya Press, 1971, 224 pages

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VORONTSOVA, L. A., et al., Alyuminiy i Alyuminiyevyye Splavy v Elektrotekhnicheskikh Izdeliyakh, Moscow, Energiya Press, 1971, 224 pages

4/5

USSR

VORONTSOVA, L. A., et al., Alyuminiy i Alyuminiyevyye Splavy v Elektrotekhnicheskikh Izdeliyakh, Moscow, Energiya Press, 1971, 224 pages

5/5

Therapy

USSR UDC 616.981.553-06:616.8-036.17

ANTONOVA, T. M., VORONTSOVA, L. P., KYDRYAVTSEVA, Ye. L., OSADCHAYA, Ye. I., POLOZOV, A. M., and TROFIMENKO, N. K., Volgograd Children's Infections Hospital No 21, and Volgograd Medical Institute

"Clinical Characteristics and Management of Patients Suffering From Botulism With Severe Affections of the Nervous System"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 10, Oct 70, pp 130-133

Abstract: Twenty botulism patients, including 12 with bulbar involvement were studied. Nineteen of the 20 patients recovered. Treatment with botulin antiserum (polyvalent initially, and monovalent after identification of the bacterium type) is effective. However, injections of the serum do not suffice when bulbar disorders develop. In such cases, it is imperative to perform tracheotomy, drain mucus from the trachea and the bronchi, and apply an artificial respiration apparatus. Patients with impaired deglutition and breathing should be admitted to artificial respiration departments as soon as possible; tracheotomy should be performed and other measures such as injection of the antiserum, washing of the gastrointestinal tract, etc., should be taken immediately. Since most botulism cases are caused by consumption of improperly

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203610003-4"

USSR

ANTONOVA, T. M., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 10, Oct 70, pp 130-133

home-canned food, it is necessary to expand public education in sanitation and hygiene. This work must be carried out by physicians in all of the specialties, who must enlighten the general public on the importance of proper processing and canning of food.

2/2

USSR

VORONTSOVA, N. A., VLASOV, O. N., FADEYEVA, M. L., BASKAKOV, YU. A.

"Alkaline Hydrolysis of O-Acyl-N-carbiosopropoxy-N-arylhydroxylamines"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protective Agents -- collection of works), No 2, Moscow, 1972, pp 295-298 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19N552)

Translation: Alkaline hydrolysis of the derivatives of N-carboisopropoxy--N-acylhydroxylamine has been studied in temperature range +25 to -17°. The hydrolysis occurs by the second order reaction. The activation energies have been calculated. It has been shown that in addition to the inductive effect, other factors influence the reaction rate, principally the steric factors. O-Acyl-N-carboisopropoxy-N-acylhydroxylamines exhibit herbicidal properties.

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USSR

VORONTSOVA, N. A., MEL'NIKOV, N. N., VLASOV, O. N., et al.

"Kinetics of the Condensation Reaction of Chloral with Dimethyl Phosphite"

V sb Khim. sredstva zashchity rast. (Chemical Plant Protective Agents), Moscow Vyp 2, 1972, pp 106-109 (from RZh-Khimiya, No 21, Nov 73, Abstract No 21N534)

Translation: The kinetics of the condensation reaction of $(MeO)_2PHO$ (I) with chloral in absence of a solvent at 11° has been studied using different ratios of the starting components. It has been shown that the reaction is a third order reaction, partial order with respect to I is second order.

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USSR UDC 669.15'26-194:620.172-436

PONIZOVSKIY, V. M., VORONTSOV, I. I., and VORONTSOVA, S. A., Perm State University imeni Gor'kiy

"Tensile Testing Steel ShKh15P Steel Balls by the Method of Large Centrifugal Fields"

Moscow, Zavodskaya Laboratoriya, No 10, Oct 72, pp 1270-1271

Abstract: Balls of steel ShKh15P (and ShKh15VD) with diameters of 1.00 to 3.50 mm were tensile tested by magnetically suspending them in an evacuated glass chamber of an ultracentrifuge and spinning them on their axis by a rotating magnetic field until failure. Results of the tests showed that the larger the diameter the quicker the ball was to fail, i.e., a 1-mm diameter ball could sustain 301-303 thousand revolutions per second before failure while the 3.49-mm ball failed upon reaching 83-86 thousand revolutions per second. The average peripheral velocity of the balls tested was 979 m/sec. 1 table, 4 bibliographic references.

1/1

USSR

UDC 576.851.71.077.3

VORONTSOVA, T. A. and GROKHOVSKAYA, I. M., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR

"The Antibody Neutralization Test as a Means of Detecting Dermacentroxenus sibericus in Experimentally Infected Dermacentor pictus Ticks"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 581-584

Abstract: The antibody neutralization test was compared to bioassay as a means of detecting Dermacentroxenus sibericus, the agent of tickborne typhus in Siberia, in experimentally infected live and dead ticks. While the antibody neutralization test quickly revealed the presence of D. sibericus antigens in live ticks, no clinical symptoms of the disease were found in guinea pigs used as test animals, and it was only after 3 weeks that the pathogen was demonstrated by immunological indices. When experimental animals were infected with dead dried ticks, not only were no clinical symptoms observed but the immunological indexes were negative. The simplicity, convenience, and speed of the proposed method make it superior to bioassay, especially for material containing dead D. sibericus. This microorganism is known to have a short survival time in the environment.

1/1

USSR UDC 911.3.616.981.455(571.12)

DUNAYEVA, T. N., DOBROKHOTOV, B. P., VORONTSOVA, T. A., BRIKMAN, D. I., and KOVALEVSKIY, Yu. V.

"An Attempt to Define the Distribution of Tularemia in Northern Rayons of Tyumenskaya Oblast"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works) Vyp. 5(15). Saratov, 1970, pp 173-181 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.97)

Translation: Zoological, parasitological, bacteriological, and epidemiological research conducted during 1967 field trips provide evidence about the wide distribution of tularemia in the northern rayons of Tyumenskaya Oblast, all the way to shore areas of the mouth of the Ob River, the foothills of the polar Urals, and the Pur River basin. According to the high percentage of natural immunity among the local population, one can judge the significant level of epidemiological activity of the foci. A discussion is presented of the reasons for the non-correlation of skin allergy test results with tularemia incidence, and the reaction of agglutination with blood serum in the population of the North. Tularemia was first established among reindeer.

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USSR

UDC 616.981.455-078.73

DUNAYEVA, T. N., VORONTSOVA, T. A., and MESHCHERYAKOVA, I. S., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Some Features of the Seroallergic Examination of Persons for Tularemia"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, pp 12-16

Abstract: A skin allergy test with tularia, an agglutination test, and the passive hemagglutination test with 264 inhabitants (natives and arrivals from elsewhere) or Nadymskiy Rayon, Yamalo-Nentsk National District, who had not been immunized against tularemia, yielded positive results in 24.2, 34.9, and 42.8% of cases, respectively. Coinciding positive results in all three tests were obtained for 54 persons. All positive results in the allergy test were regarded as diagnostically valid. Coinciding positive results in the two serological reactions (the allergy test may be negative in persons with tuberculosis despite a past infection with tularemia), or positive results in either serological reaction at titers ≥ 1:40 resulted in a retrospective diagnosis of tularemia for 99 persons (37.4% of cases) excluding in the agglutination test cross-reactions due to brucellosis (two such cross-reactions were observed). 1/2

USSR

DUNAYEVA, T. N., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 48, No 4, Apr 71, pp 12-16

Use of all three reactions made it possible to establish more precisely the ratio of persons with immunity to tularemia in the population and to eliminate nonvalid positive results obtained at low serum dilutions. A predominance of positive results in serological reactions over those in the allergy test is typical for inhabitants of northern regions. It is due to a lowered allergic sensitivity of the skin caused by vitamin C deficiency

2/2

USSR

UDC 616.988.25-022.395.42-097.3

VORONTSOVA, T. A., Division of Infections With Natural Foci, Scientific Research Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR

"Dynamics of Immunological Indexes in Rural Inhabitants After the Eradication of Ticks in a Natural Focus of Tick-Borne Encephalitis"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1, Jan/Feb 73, pp 32-36

Abstract: Changes in the immunity of inhabitants of an endemic forested territory (Alnashskiy Rayon, Udmurt ASSR) during the period 1965-1970 in the beginning of which eradication of ticks with DDT in the forests was carried out were studied. An investigation in 1965 and 1970 of 145 persons disclosed long-time persistence of antihemagglutinins in subjects who were naturally infected in the region in question due to contact with ticks in what was a focus of tick-borne encephalitis with a high loimic potential. During the five years following the tick eradication treatment of the forests, the ratio of persons with immunity decreased from 65.9 to 56.6% and the mean antibody titers dropped from 4.9 $\log_2$ to 4.1 $\log_2$. The drop in the intensity of immunity and in the ratio of persons with immunity in the population in the absence of exposure to

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USSR

VORONTSOVA, T. A., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1, Jan/Feb 73, pp 32-36

the causative factor ot tick-borne encephalitis took place predominantly among younger persons; in the age group above 50 yrs the mean antibody titers and the number of positive reactions of hemagglutination inhibition did not change during the five years in question. The author thanks Prof. V. V. Kucheruk, at whose initiative the work described was carried out.

2/2

USSR

UDC 576.858.73.095.57

VORONTSOVA, T. V., GERMANOV, A. B., and SOKOLOV, N. I., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Induction of S-Mutation in Fowl Plague Virus by Ethylenimine"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 416-421

Abstract: Four mutants, formed spontaneously or induced by ethylenimine, were isolated from a population of the L_{02} large-plaque strain of fowl plague virus: a micro-plaque mutant, a small-plaque mutant which was stimulated by protamine sulfate, a small-plaque mutant which was not stimulated by protamine sulfate, and a medium-plaque mutant. All mutants were genetically stable. Ethylenimine was very effective in inducing mutations when it was applied to a reproducing population of fowl plague virus. Optimal conditions for induction of S-mutations with ethylenimine were established. A correlation was found to exist between the lethal and mutagenic effects on one hand and the stage of virus replication on the other hand. The most pronounced lethal and mutagenic effects took place when ethylenimine was applied in the first two hours of virus replication.

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1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--QUASARS AS PROTOCLUSTERS OF GALAXIES -U-

AUTHOR--VORONTSOVVELYAMINOV, B.A.

COUNTRY OF INFO--USSR

SOURCE--ASTROFIZIKA, VOL. 6, FEB. 1970, P. 101-107

DATE PUBLISHED----FEB70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--QUASAR, GALAXY, GRAVITATION RED SHIFT, STELLAR SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1759 STEP NO--UR/0388/70/006/000/0101/0107

CIRC ACCESSION NO--AP0125375

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125375

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A HYPOTHESIS ACCORDING TO WHICH SUPERDENSE BODIES (OSGS) BECOME QUASARS WITH TIME AND DISINTEGRATE INTO COMPONENTS, WITH FURTHER FRAGMENTATION LEADING TO THE FORMATION OF GROUPS AND CLUSTERS OF GALAXIES. RECURRENT NONTHERMAL RADIO EMISSION PERSISTS AT ALL SUCCESSIVE STAGES OF FRAGMENTATION AND QUASAR EVOLUTION, WHILE THE ROLE OF NONTHERMAL OPTICAL EMISSION DIMINISHES. THIS HYPOTHESIS EXPLAINS THE ABSENCE OF QUASARS IN GALAXY CLUSTERS, THEIR COMPLEX RADIO STRUCTURE, CLUSTER FORMATION DETAILS, AND THE DISTRIBUTION OF RADIO GALAXIES. THE RED SHIFT GRAVITATIONAL COMPONENT BECOMES SIGNIFICANT, AND THE REQUIREMENTS FOR ENERGY OUTPUT PER UNIT MASS OF A QUASAR BECOME SOMEWHATE RELAXED. THE HYPOTHESIS IS BASED ON AMBARTSUMIAN'S CONCEPT OF CASCADING FRAGMENTATION OF DENSE MATTER WITH SUBSEQUENT SCATTERING OF THE FRAGMENTS IN THE FORM DISPERSING STELLAR SYSTEMS. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: AP0044915 Abstracting Service: CHEMICAL ABST. Ref. Code: 4-70 U50000

83049h Comparison of hypernetted chain equation and Monte Carlo results for a system of charged hard spheres. Vorontsov-Vel'yaminov, P. N.; El'yashevich, A. M.; Rasaiah, J. C.; Friedman, H. L. (Inst. Phys. Leningrad State Univ., Leningrad, USSR). *J. Chem. Phys.* 1970, 52(2), 1013–14 (Eng). The title 2 methods of calcn. of observable properties was applied to a model system in which the *N*-body potential is a sum of a pair contributions. This is the primitive model for an electrolyte soln. in a solvent of dielec. const. ϵ, a system of charged hard spheres in a dielec. medium. Both methods are accurate over the range of model parameters corresponding to 1:1 electrolytes in H_2O at 25°: $\epsilon = 80$, and $e_+ = -e_- = 1$ electronic charge.
HGJN

REEL/FRAME 19771773

USSR

UDC 632.951:633.814.574

VORONTSOVA, R. V. and ZABOLOTSKAYA, A. S., Scientific Research Institute of Mountain Horticulture and Floriculture

"Effect of Insecticides on Essential Oil Content in Sweet Bay [illegible]

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 7, Jul 70, pp 30-31

Abstract: Studies were conducted of the effect of various insecticides on essential oil content in leaves of the sweet bay. The experiments were conducted in 1965 and 1966 in Lazarevskiy Rayon of Krasnodarskiy Kray. For spraying, preparations recommended for control of sweet bay pests were used. In the first year, the trees were sprayed in June and August and in the second year -- in May, July and September. Leaf samples were taken between 10 and 11 o'clock in the morning for essential oil analysis. The oil was extracted with boiling water using the Clinsberg receptacle. In the experiments, untreated trees were used for control purposes.

Results of the experiments established the fact that 2-3 time spraying of the sweet bay tree with methylmercaptophos, mecarbam and preparation No 30 at first has a negative effect on the accumula-

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USSR

VORONTSOVA, R. V., et al., Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 7, Jul 70, pp 30-31

lation of essential oil in its leaves. Towards the end of the vegetational period (start of harvesting), the essential oil content reaches the level in the control or even exceeds it. In treatment with methylethylthiophos and preparation No 30 in 5% concentration, the amount of essential oil in the leaves during the harvesting season increases; however, the control level is not attained.

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MASSES AND THE MASS LUMINESCENCE RATIO OF GALAXIES -U-

AUTHOR--VORONTSOVVELYAMINOV, B.A.

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHESKII ZHURNAL, OVL. 47, NO. 2, 1970, P. 271-276

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--ROTATION, GALAXY, GALACTIC MASS, LUMINESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1474 STEP NO--UR/0033/70/047/002/0271/0276

CIRC ACCESSION NO--AP0125102

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125102

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF A TOTAL OF 215 DETERMINATIONS OF ROTATION AND OTHER MOTIONS IN A GROUP OF 141 GALAXIES AND 28 NUCLEAR REGIONS. LINEAR FORMULAS ARE OBTAINED TO DESCRIBE THE RELATION BETWEEN MASS AND LUMINESCENCE IN THE GALAXIES E-SO AND SO-IRR. NUMERICAL VALUES ARE ESTIMATED FOR THE MASSES OF THESE GALAXIES AND AUTONOMOUS NUCLEAR REGIONS. AN AVERAGE VLAUE OF ABOUT 8 IS OBTAINED FOR THE MASS LUMINESCENCE RATIO IN MOST OF THESE GALAXIES NOTWITHSTANDING THEIR TYPE AND COLOR. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

VOROB'YEV, Yu. V.

Radio Engineering

DEPARTMENT OF THE ARMY
U.S. ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER
220 SEVENTH STREET NE.
CHARLOTTESVILLE, VIRGINIA 22901

In Reply Refer to:
FSTC-HT-23-1262-72
DIA Task No. T70-23-01

TRANSLATION

ENGLISH TITLE: APPLICATION OF THE "LUCH" RADIO DISTANCE FINDER

SOURCE: Geodeziya i Kartografiya, #9, 1971, pp 24-31

Date: 7 March 1973

AUTHOR: Yu. V. Vorob'yev

Radio Engineering

LANGUAGE: Russian

REQUESTOR: GEI Mr. E. Smith
TRANSLATOR: AGSI K-1955
COUNTRY: USSR

NOTICE

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UNCLASSIFIED

TITLE--SEPARATION OF SODIUM SULFATE FROM CONCENTRATED SULFATE BRINES BY HEATING -U-

PROCESSING DATE--18SEP70

AUTHOR-(05)-BORODULINA, YE.K., GORELOVA, V.A., SPEKTOR, I.E., FURMAN, A.A., VOROPANOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1), 38-40

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SEPARATION, SODIUM HYDROXIDE, SODIUM CHLORIDE, SODIUM SULFATE

CONTROL MARKING--NO RESTRICTIONS

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PROXY REEL/FRAME--1985/1642

STEP NO--UR/0064/70/046/001/0038/0040

CIRC ACCESSION NO--AP0101697

UNCLASSIFIED

272 007 UNCLASSIFIED

IRC ACCESSION NO--AP0101697 PROCESSING DATE--18SEP70

BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONCD. SULFATE BRINES FROM ELECTROLYTIC NAOH MANUFG. PLANTS CONTAIN NACL 22.0 TO 2.5, NA SUB2 SO SUB4 6 TO 7, AND NAOH 0.5 TO 1.5PERCENT; AS A RESULT OF EVAPN. OF 5 TO 7.5PERCENT OF THE H SUB2 O (BY HEATING TO 100PERCENT) UP TO 40PERCENT OF THE NA SUB2 SO SUB4 IS PPTD. AS A SOLID (CONTG. NO NACL). EVAPN. OF A LARGER FRACTION OF THE H SUB2 O RESULTS IN A HIGHER DEGREE OF EXTN. OF NA SUB2 SO SUB4 WITH THE PPT. BUT IN THAT CASE THE PPT. CONTAINS SUBSTANTIAL AMTS. OF NACL. EVAPN. OF

A1234

UNCLASSIFIED

USSR

UDC 621.791:533.9

VOROPAY, N. M., Cand. Tech. Sci., SHCHERBAK, V. V., and GRIGOR'YEV, A. A., Engrs.

"Pulse Microplasma Welding of Thin Aluminum Gaskets"

Moscow, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 11, Nov 71, p 19

Abstract: Gaskets consisting of an Al shell with a wall thickness of 0.2-0.3 mm filled with asbestos and having a diameter $\leq$ 600 mm are used in chemical and petroleum conversion equipment. Difficulties have been encountered in the butt welding of the thin Al sheets because of the formation of burn holes and the failure of the sheets to join. A satisfactory method of pulse microplasma butt welding of the Al sheets has been developed by the Institute of Electric Welding imeni Ye. O. Paton jointly with the VNIIPT of Chemical and Petroleum Conversion Equipment. In the procedure, Ar is used as the plasma-forming gas and He as a protective gas which compresses the arc radially. Melting of the metal takes place during the positive potential pulse and dispersion of the oxides that have formed on the surface during the negative potential pulse. The pulse of the current of direct polarity has a higher amplitude than that of the current of reverse polarity. Equipment for manual and mechanized (automatic) welding by this method has been

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USSR

VOROPAY, N. M., et al., Khimicheskoye i Neftyanoye Mashinostroyeniye, No 11, Nov 71, p 19

developed. Use of a thin welding wire is preferable to welding without a wire, because the Al foil then does not have to be cut as precisely. The diameter of the nozzle for the plasma-forming Ar is 0.8-1.9 mm. In mechanized welding of Al sheets 0.3 mm thick, the current is 12-15 A, the rate of welding 30-40 m/hr, the flow of Ar 0.6-0.8 l./hr, the flow of He 2-3 l./hr. The burners are water-cooled. W electrodes with a diameter of 1.0-1.5 mm and a conically pointed tip are applied. Besides its application in the production of Al gasket shells, the procedure can be used quite generally for the welding of Al, Mg, and Al and Mg alloys to produce flat gaskets and parts and articles of other shapes with a wall thickness of 0.2-1.5 mm.

USSR

UDC 621.791.85:669.715

RABKIN, D. M., VOROPAY, N. M., and BONDAREV, A. A., Institute of Electric Welding imeni Ye. O. Paton

"Special Features of Electron-Beam Welding of Aluminum Alloys"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 48-52

Abstract: A study was made of the characteristics of electron-beam welding of aluminum alloys as done on the U-3M machine using the SP-30 power supply. Also investigated were the effect of the process parameters on the type of alloy, the characteristics and structure of welds of typical aluminum alloys, and the development of optimal modes and techniques for the welding process. The specimens for the experimentation were plates made of ADO, AMg6, AMg6N, D20-1, ATsM, and V95 alloys. The parameters of each specimen are given in a table. The V95 specimens were welded in their annealed state after tempering and artificial aging; the ADO, AMg6, and D20-1 specimens were welded with a wire of the same chemical composition as the original metal; and both the V95 and ATsM alloys were welded with no additives. The test results indicate that electron-beam welding results in high structural strength and that the strength of the weld increases with increasing welding speed.

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USSR

UDC 621.791.008.1

VOROPAY, N. M., and KAMALYAN, G. M.

"Conference on Welding Ferrite Metals and Alloys"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 76-77

Abstract: A report is given of the transactions of a conference held in Yerevan on October 22-24, 1970 which was sponsored by the Armenian Administration of the Scientific Technical Division of Mashprom, the House of Technology, the Yerevan Polytechnical Institute, and the Institute of Electric Welding imeni Ye. O. Paton. Participants in the conference came from all the republics in the Soviet Union. The keynote address was by V. N. Manukyan, who noted the wide use of various methods of welding ferrite metals. Another speaker, D. M. Rabkin, discussed the contemporary state of the art, with emphasis on perfecting the methods and techniques of ferrite metal welding. Following his talk, 25 reports were read and discussed. A brief resume of each of these papers is given.

1/1

1/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THE PECULIARITIES OF TECHNOLOGY OF ARC WELDING OF THE ALUMINUM ALLOYS IN ARGON AT ELEVATED PRESSURE -U-

AUTHOR-(03)-KARAMYAN, R.S., VOROPAY, N.M., RABKIN, D.M.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO 1, 70, PP 11-15

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ALUMINUM ALLOY, ARGON GAS WELDING, BIBLIOGRAPHY, INERT GAS ARC WELDING, HIGH PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/2042 STEP NO--UR/0135/70/000/001/0011/0015

CIRC ACCESSION NO--AP0118996

UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118996

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE PROBLEMS DEALING WITH TECHNOLOGY, TECHNIQUES, AND EQUIPMENT USED IN THE PROCESS OF WELDING OF ALUMINUM ALLOYS IN A CONTROLLED ATMOSPHERE AT ELEVATED PRESSURE BY NONCONSUMABLE AND CONSUMABLE ELECTRODES. FACILITY: INSTITUTE OF ELECTRICAL WELDING IMENI YE. O. PATON OF THE ACADEMY OF SCIENCES UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 621.791.754.293.011:669.71

KARAMYAN, R. S., Engineer, VORORAY, N. M., Candidate of Technical Sciences, RABKIN, D. M., Doctor of Technical Sciences, Institute of Electric Welding imeni Ye. O. Paton

"Features of the Process of Arc-Welding Aluminum Alloys in Argon Under Elevated Pressure"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 70, pp 11-15

Abstract: Specimens of the AMg6 aluminum alloy were arc-welded in a protective atmosphere of argon under a pressure higher than atmospheric pressure to determine optimal conditions for this method of welding. It was found that before the welding chamber is filled with argon, it should be evacuated to about $(2--3).10^{-2}$ mm Hg. Use of transformers with increased no-load voltage (up to 120 v) ensures reliable starting and burning of the arc at an argon pressure of 2--6 atm without decreasing the arc gap. The depth of weld penetration and the effective thermal power of the arc increase, and the zone of thermal effect becomes narrower, with the increased pressure of inert gas. Use of

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USSR

KARAMYAN, R. S., et al., Svarochnoye Proizvodstvo, No 1, Jan 70, pp 11-15

controlled atmosphere of argon under elevated pressure in welding of aluminum alloys inhibits the development of pores in the crystallizing metal. Moreover, the mechanical properties and the density of welds increases, and their chemical composition approaches that of the parent metal. This welding method is recommended for joining cast aluminum parts, and for small articles made of alloys containing easily vaporizing elements.

2/2

USSR

UDC 621.791.72.019:546.621

BONDAREV, A. A., VOROPAY, N. M., ISHCHENKO, A. Ya., RABKIN, D. M., Ye. O. Paton Electric Welding Institute

"Influence of Technological Factors on Porosity of Seams in Aluminum, Produced by Cathode Ray Welding"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 1972, pp 24-26.

Abstract: This work studies the influence of various technological factors on the porosity of seams produced by cathode ray welding of the alloys AMg6 and D20-1. The hydrogen content in the base metal was 0.86 and 0.23 $cm^3/100$ g respectively. Experimental production batches of AMg6 with various hydrogen contents were also studied. It was found that seam porosity was determined by welding rate, spatial position of the joint, initial hydrogen content in the base and welding materials and method of material treatment before welding. Under identical welding conditions, series-produced AMg6 alloy is more inclined to pore formation than D20-1 alloy, a result of its higher content of hydrogen and intensive evaporation of magnesium. Porosity can be decreased or eliminated by removal of the surface film from the base metal and welding material, increasing the welding speed and decreasing the hydrogen content in the base metal.

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USSR

UDC 621.791.72:621.9-536.546.621

BONDAREV, A. A., VOROPAY, N. M., RABKIN, D. M., Ye. O. Paton Electric Welding Institute, STEPANOV, V. F., POSTNIKOV, V. P., Moscow Oblast

"Cathode Ray Welding of Spherical Containers of Aluminum Alloys"

Kiev, Avtomaticheskaya Svarka, No 5, May 1972, pp 44-47

Abstract: The features of cathode ray welding of vacuum tight joints were studied as applicable to spherical containers of AMG6 and D20-1 aluminum alloys. Welded joints produced at the optimal welding modes showed no pores, cracks or other defects. The β phase was finely and evenly dispersed. In contrast to argon-arc welding, the near-seam zone had practically no areas of recrystallization with enlarged base-metal grains. The mechanical properties of joints produced by cathode ray welding were universally superior to those produced by argon-arc welding. The stability of the results of mechanical tests was high; the strength factor of the joints was greater than with argon-arc welding.

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USSR

UDC 621.791.72.011+621.791.001:699.715

BONDAREV, A. A., VOROPAY, N. M., Institute of Electric Welding im. Ye. O. Paton, AN UkrSSR

"Transverse Deformations During Cathode-Ray and Argon-Arc Welding of Butt Joints in AMg6 Alloy"

Kiev, Avtomaticheskaya Svarka, No 12, 1972, pp 31-33

Abstract: A comparative study is made of deformations produced by cathode-ray and argon-arc welding of AMg6 alloy as a function of metal thickness, welding rate, seam shape, and welding wire. Due to the low specific running energy, high heat concentration, small volume of the welding bath and minimum heating zone, transverse deformations produced by cathode-ray welding are two to four times less than those produced by argon-arc welding, using the optimal modes in both cases. With cathode-ray welding, the transverse shortening stabilizes 70-120 mm from the beginning of the seam, so that specimens for the study of this type of deformation can be selected three to four times shorter than those for argon-arc welding. One effective means of decreasing transverse shortening during cathode-ray welding of aluminum alloys is to increase the speed of the process to over 60 m/hr.

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USSR

UDC: 535.37

SEVCHENKO, A. N., Academician of the Academy of Sciences of the BSSR, BUROV, L. I., VOROPAY, Ye. S., ZHOLNEREVICH, I. I., SARZHEVSKIY, A. M., Belorussian State University imeni V. I. Lenin

"Polarization Curves of Fluorescence Induced by Two-Photon Excitation"

Minsk, Doklady Akademii Nauk SSSR, Vol 17, No 2, 1973, pp 117-120

Abstract: An expression is derived for the degree of polarization of fluorescence in the case of excitation by two linearly polarized light beams with arbitrarily oriented polarization vectors. The resultant expression can be used not only to calculate the degree of polarization of fluorescence for different orientations of the wave vectors and the vectors of polarization of the exciting fluxes but also to obtain information on the states participating in two photon absorption. Expressions are tabulated for the degree of fluorescence polarization as a function of the angle between the polarization vectors of the incident light beams with oblique recording of fluorescence. Polarization curves plotted from the expressions can give an idea of the kinds of oscillators taking part in processes of absorption and emission.

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USSR

UDC 8.74

ADEL'SON-VEL'SKIY, G. M., VOROPAYEV, V. I., KALINOVSKAYA, S. S.

"Problems of Software for Automated Control Systems for Water Conservation Construction"

V sb. Mat. metody v ekon. (Mathematical Methods in Economics--collection of works), Vyp. 9, Riga, Zinatne, 1972, pp 33-75 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V478)

Translation: A study was made of some of the principles of constructing the software for automated control systems. It is proposed that the problems of the automated control system be classified with respect to mathematical techniques used for their solution. Primary attention has been given to the statement of the problems of solving the balance equations with respect to unfixed formulas, the problems of optimization solved by the methods of mathematical programming (selection of the orders and their distribution among the contract organizations, optimization of the technological process of the basic types of construction operations, and so on), and the problems of operative (calendar) planning. Some mathematical models are presented in the article which were developed for solving the mentioned problems. The authors present examples of the structural description of the information available in the automated control system on the objects of control, and they also present a description of the

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USSR

ADEL'SON-VEL'SKIY, G. M., et al., Mat. metody v ekon., Vyp. 9, Riga, Zinatne, 1 1972, pp 33-75

basic types of programs of the information part of the automated control system. The problems connected with automation of programming are also reflected. The bibliography has 21 entries.

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USSR UDC 576.3:612.017:615.5

VOROPAYEV, V. M.

"The Effect of Dibazole Together With Some Eleutherosides on the Embryogenesis of Amphibians", pp 65-68, Sintez Belka i Rezistentnost' Kletok, (Proteins Synthesis and Cell Resistance), Leningrad, "Nauka," 1971, 104 pp

Abstract: It was shown that dibazole together with some eleutherosides have a stimulating effect on the early embryogenesis of frogs. In the presence of these substances the incorporation of C^{14}-l-phenylalanine into the total protein of the fetus is increased. This phenomenon is considered capability of these substances to increase th translation process.

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1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--SYNTHESES OF PYRIDINES. X. NEW METHOD FOR SYNTHESIZING SOME MERCAPTOPYRIDINES AND QUINOLINES -U-

AUTHOR-(02)-VOROPAYEVA, A.V., GARBAR, N.G.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 184-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYRIDINE, CHEMICAL SYNTHESIS, MERCAPTAN, QUINOLINE, ORGANIC NITRO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1111 STEP NO--UR/0409/70/000/002/0184/0185

CIRC ACCESSION NO--AP0104509

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104509

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HALO COMPD. (0.2 MOLE), 0.4 MOLE NA SUB2 S SUB2 O SUB3, AND 70 ML 70PERCENT ALC. WAS HEATED 4 HR AT 120-30DEGREES IN AN AUTOCLAVE TO GIVE THE TITLE COMPDS. (COMPD., PERCENT YIELD, AND M.P. (ALC.) GIVEN): 2,METHYL,6,METHOXY,4,CHLOROQUINOLINE, 94, 287-9DEGREES; 2,METHYL,4,7,DICHLOROQUINOLINE, 94, 290-2DEGREES; 2,BROMOPYRIDINE, 78-85, 125DEGREES. NA SUB2 S SUB2 O SUB3, 5,NITRO,2,CHLOROPYRIDINE (0.2 MOLE EACH), AND 50 ML 70PERCENT ALC. WAS REFLUXED 3 HR TO GIVE 96PERCENT 5,NITRO,2,MERCAPTOPYRIDINE.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--SYNTHESES OF PYRIDINES. X. NEW METHOD FOR SYNTHESIZING SOME MERCAPTOPYRIDINES AND QUINOLINES -U-

AUTHOR-(02)-VOROPAYEVA, A.V., GARBAR, N.G.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 184-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYRIDINE, CHEMICAL SYNTHESIS, MERCAPTAN, QUINOLINE, ORGANIC NITRO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1111 STEP NO--UR/0409/70/000/002/0184/0185

CIRC ACCESSION NO--AP0104509

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104509

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HALO COMPD. (0.2 MOLE), 0.4 MOLE NA SUB2 S SUB2 O SUB3, AND 70 ML 70PERCENT ALC. WAS HEATED 4 HR AT 120-30DEGREES IN AN AUTOCLAVE TO GIVE THE TITLE COMPDS. (COMPD., PERCENT YIELD, AND M.P. (ALC.) GIVEN): 2,METHYL,6,METHOXY,4,CHLOROQUINOLINE, 94, 287-9DEGREES; 2,METHYL,4,7,DICHLOROQUINOLINE, 94, 290-2DEGREES; 2,BROMOPYRIDINE, 78-85, 125DEGREES. NA SUB2 S SUB2 O SUB3, 5,NITRO,2,CHLOROPYRIDINE (0.2 MOLE EACH), AND 50 ML 70PERCENT ALC. WAS REFLUXED 3 HR TO GIVE 96PERCENT 5,NITRO,2,MERCAPTOPYRIDINE.

UNCLASSIFIED

USSR

UDC 517.948

VOROPAYEVA, G. A., Moscow

"Cauchy-Type Problem for Psuedo-Differential Equations with Operator Coefficients"

Kazan', Izvestiya VUZ, Matematika (News of the Higher Educational Institutions, Mathematics) No 7(98), July, 1970, p 35-39

Abstract: An example is given of the application of the Keldysh method to the simplest case of determining pseudo-differential equations with operator coefficients that leads to an important case of difference schemes. The solution of such equations is unique and exists on the compact set of initial values. The problem

$$\left[1+\sum_{j=0}^{n} A_j T^j (d/dt)\right] x(t) = 0,\quad T^j (d/dt)\, x(t) = \chi_j,\quad j = 0, \ldots, n-1, \qquad (1)$$

has a solution $\underline{x}(t) \in C_T / C_T^0$ if for each $x(t)$ of the continguity class $\underline{x}(t)$ ($x(t) \in \underline{x}(t)$) the conditions

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USSR

VOROPAYEVA, G. A., Izvestiya VUZ, Matematika, No 7(98), July, 1970, p 35-39

$$\left.\begin{aligned}\left[1+\sum_{j=0}^{n}A_jT^j(d/dt)\right]x(t)=f(t),\ f(t)\in C_T^0,\\ T^j(d/dt)\,x(t)|_{t=0}=x_j,\quad j=0,\ldots,\quad n-1,\end{aligned}\right\}$$

are fulfilled. The following theorem is treated: Given that operator $A(\lambda) = 1 + \sum_{j=0}^{n} A_j\lambda^j$ satisfies the Keldysh conditions; and that equations $T(\mu) = \lambda_i$ (where λ_i are eigenvalues of operator $A(\lambda)$) are solvable and do not have multiple roots, a unique solution exists from C_T/C_T^0 of (1) for a set of initial data compact in $H^n = H \times H \times H \ldots \times H$. The theorem is proved and several examples are discussed briefly. Orig. art. has 4 refs.

2/2

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DETERMINATION OF ALUMINUM -U-

AUTHOR-(03)-VOROPAYEVA, G.A., KALININ, S.K., TARKHINA, V.D.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,539

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOTOMETRIC ANALYSIS, CHEMICAL PATENT, ORGANIC SOLVENT, ALUMINUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0833 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131426

UNCLASSIFIED

2/2 021 UNCLASSIFIED

CIRC ACCESSION NO--AA0131426 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AL IS DETD. BY FORMING AL COMPLEXES WITH TRIPHENYLMETHANE DYES (E.G. CHROME AZUROL S OR ERIOCHROME CYANINE) AND PHOTOMETRIC ANAL. OF THE COMPLEX. THE COMPLEX IS SEPD. BY FLOTATION BY ADDN. OF ORG. SOLVENTS TO THE STARTING SOLN.

FACILITY: GIPRONIKEL STATE PLANNING AND SCIENTIFIC RESEARCH INSTITUTE OF THE NICKEL INDUSTRY.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--POLYSILOXANES -U-

AUTHOR-(05)-SOBOLEVSKIY, M.V., NAZAROVA, D.V., VOROPAYEVA, G.V., KUZNETSOVA, A.A., GALASHINA, M.L.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,445

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYSILOXANE, CHEMICAL PATENT, ORGANIC SULFUR COMPOUND, ORGANIC SILANE, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1418 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126817

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128817

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYSILOXANES WITH BOTH THIENYL AND ALKOXY GROUPS ARE PREPD. BY HYDROLYSIS OF ORGANOCHLOROSILANES OF FORMULA RSICL SUB3, WHERE R EQUALS THIENYL, HALOTHIENYL, METHYLTHIENYL, OR ITS MIXT. WITH DI OR TRIFUNCTIONAL CHLOROSILANES, WITH A MIXT. OF H SUB2 O AND ETOH IN THE PRESENCE OF AN ORG. SOLVENT.

UNCLASSIFIED

1/2 044 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ELECTRONIC ENERGY SPECTRA AND THE EQUATION OF STATE OF SOLIDS AT HIGH PRESSURES AND TEMPERATURES -U-

AUTHOR-(03)-VOROPINOV, A.I., GANDELMAN, G.M., PODVALNYY, V.G.

COUNTRY OF INFO--USSR

SOURCE--USP. FIZ. NAUK 1970; 100(2), 193-224

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM, IRON, SILVER, TITANIUM, POTASSIUM, CALCIUM, LEAD, BIBLIOGRAPHY, HIGH PRESSURE EFFECT, PHYSICAL PROPERTY, QUANTUM MECHANICS, TEMPERATURE EFFECT, ELECTRON ENERGY, SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/2001 STEP NO--UR/0053/70/100/002/0193/0224

CIRC ACCESSION NO--AP0118960

UNCLASSIFIED

2/2 044 UNCLASSIFIED

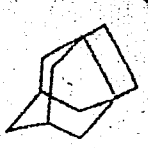
CIRC ACCESSION NO--AP0118960 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 37 REFS. THE QUANTUM MECH. THEORY, CANCD. DATA ON ELECTRON ENERGY SPECTRUM, AND THE EQUATIONS OF STATE ARE DISCUSSED WHICH CAN BE USED TO CALC. THE CHANGE IN PROPERTIES OF CRYST. SOLIDS AT ANY PRESSURE AND TEMPS. BELOW 100,000DEGREES K. CALCD. DATA ON THE PROPERTIES OF AL, FE, AG, TI, V, K, CA, AND PB ARE GRAPHED AND TABULATED FOR VARIOUS PRESSURES AND TEMPS.

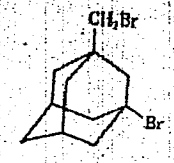
UNCLASSIFIED

ACC. NR. AP0042035 Abstracting Service: CHEMICAL ABST. 4170 Ref. Code UR0366

89871s Photoisomerization of 3,7-dimethylenebicyclo[3.3.1]-nonane. Yurchenko, A. G.; Voroshchenko, A. T.; Stepanov, F. N. (Kiev. Politekh. Inst., Kiev, USSR). *Zh. Org. Khim.* 1970, 6(1), 189–90 (Russ). The irradn. of 3,7-dimethylenebicyclo[3.3.1]nonane in Et_2O soln. contg. also 4% "Cu complex" gave 92–6% tetracyclo[4.3.1.$1^{4,8}$.$0^{1,6}$] undecane (I), the bromination of which without solvent gave 1-bromo-3-bromomethyladamantane (II).



(I)



(II)

CITJR

REEL/FRAME
19751932

USSR

UDC 621.357.12:661.25(088.8)

BEYDIN, V. K., VOROSHILOV, I. P., GORBACHEZ, A. K., NECHIPORENKO, N. N., and VOROSHILOV, P. KH.

"A Process for Preparing Sulfuric Acid"

USSR Author's Certificate No 289821, filed 6 Jan 69, published 5 Sep 72, (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L262P)

Translation: A process is patented for reparing H_2SO_4 by the electrolysis of an aqueous solution of metal sulfates, during the depolarization of the anode by a sulfur gas in the presence of a catalyst in the electrolyte. This process is improved in that to increase the degree of utilization of the sulfur dioxide and to decrease the anode potential to increase the yield of the final product, a soluble halide salt is added to the electrolyte as a catalyst which is preferential for the cation, similar to the cation of the electrolyte. The catalyst is added in concentrations of 0.1 to 50 grams/liter. The process is carried out for a D_a of 500 to 3,000 amps/m^2 and at an electrolyte temperature of 20-90°. For example, the electrochemical processing of Na_2SO_4, the electrolysis is carried out in a three chamber electrolysis apparatus with

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USSSR

BEYDIN, D. K., et al., USSR Author's Certificate No 189821, filed 6 Jan 69, published 5 Sep 72

an iron (wire-gauze) cathode and a hollow graphite anode with a porosity of 33%. The initial electrolyte (Na_2SO_4) is added to a concentration of 290/ grams/liter in the middle compartment of the apparatus. To the electrolyte is added 0.56 grams/liter of NaCl. The sulfur dioxide evolves under a pressure of 150 mm of mercury in the hollow part of the anode and it migrates through the pores of the graphite to the anolyte. The process goes at temperatures of the original electrolyte of 60°, and a charge on the electrolytic apparatus of 5 amps and D_a of 1000 amps/m^2. It was determined that the anode potential was 1.15 volts and the efficiency of the utilization of the sulfur gas was 75-80%.

2/2

USSR

UDC 621.357.12:661.25(088.8)

(1)

BEYDIN, V. K., VOROSHILOV, I. P., GORBACHEZ, A. K., MECHIPORENKO, N. N., and VOROSHILOV, P. KH.

"A Process for Preparing Sulfuric Acid"

USSR Author's Certificate No 289821, filed 6 Jan 69, published 5 Sep 72, (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L262P)

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USSSR

(1)

BEYDIN, D. K., et al., USSR Author's Certificate No 189821, filed 6 Jan 69, published 5 Sep 72

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2/2

Heat Treatment

USSR

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"Effect of Plastic Deformation and Heat Treatment on Linear Thermal Expansion Coefficient and Magnetic Properties of Invar Alloys"

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Abstract: Experiments were carried out with specimens made from $36NKh_1$ and $36NKh_2$ alloys which were subjected to homogenization at 1050°C for 100 hours. The linear thermal expansion coefficient (α) of these alloys reached its maximum value at 130-170°C and its minimum value at 25 and 270°C. The lowest value of α was observed for the specimen subjected to severe plastic deformation, and the highest was obtained with specimens subjected to tempering at 600°C for 5 hours, followed by cooling to 100°C for 90 hours. The plastic deformation of the alloy containing 36% Ni increased the magnetic susceptibility in the entire range of magnetic fields (up to 3000 oersted), as well as of magnetostriction. The increase in the magnetic susceptibility and magnetostriction of the paraprocess, and the decrease in the magnetization saturation as a function of plastic deformation of Ni-Fe alloys containing different amounts

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of Ni is attributed to a disintegration of regions with a short-range order (types NiFe or $NiFe_3$) and to a static distribution of the iron atoms in solid solution.

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